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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/582,230	07/21/2000	Takayoshi Hiraga	0670-248	1846

7590

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EXAMINER

CHANG, AUDREY Y

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 03/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/582,230

Applicant(s) *ru*

HIRAGA ET AL.

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3-5, 11-13 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5, 11-13 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Remark*

- This Office Action is in response to applicant's amendment filed on January 14, 2002, which has been entered as paper number 7.
- By this amendment, the applicant has amended claims 3-5, 11-13 and 17-19 and has canceled claims 1-2, 6-10, and 14-16.
- Claims 3-5, 11-13 and 17-19 remain pending in this application.
- The rejections to claims 17, 18 and 19 under 35 USC 112, **first paragraph**, set forth in the previous Office Action dated August 13, 2001 **still hold**.
- The rejections to claims 3, 11-13 and 19 under 35 USC 112, **second paragraph**, set forth in the previous Office Action dated August 13, 2001 **still hold**.
- The objection to the drawings concerning claim 11 is **withdrawn** and the objection to the drawings concerning numeral "14" **still holds**.

### *Response to Amendment*

1. The amendment filed on January 14, 2002 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: claims 17 and 19 have been amended to claim "a method of producing a hologram member having diffraction hologram patterns and non-diffraction hologram patterns" wherein the method has steps that are originally set for "forming a plurality of imaginary laser light sources". The specification fails to teach the method for forming plurality of laser light sources is the same as the method for producing a hologram member. **The applicant is respectfully reminded that the amendments to claims 17 and 19 have changed the scopes of the claims from their original**

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**presentation.** Also the specification fails to teach that a hologram member may be produced by simply “position hologram patterns in the hologram member”. Claim 18 inherit the rejections form its based claim

Applicant is required to cancel the new matter in the reply to this Office Action.

***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claims 17-18 and 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.**

The reasons for rejection are set forth in the previous Office Action dated August 13, 2001.

The reasons for rejection based on the newly added matters are set forth in the paragraph above.

The specification fails to teach how could the hologram member be produced by directing light toward the “hologram member” and by disposing diffraction hologram patterns in the hologram member. It is not clear how could the “hologram member” be produced by using itself? The applicant is respectfully reminded that the method steps disclosed in claims 17 and 19 **will not** be able to produce a hologram.

The applicant is respectfully reminded **again** that there is **no such** thing as “non-diffraction hologram patterns”. This term is strictly in contradiction with the definition of a hologram.

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 3-5, 11-13, 17-18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The reasons for rejection to claims 3, 11 and 19 set forth in the previous Office Action still hold.

The claims recite the phrases “hologram patterns”, “hologram pattern”, “diffraction hologram patterns” and “non-diffraction hologram patterns” that are very confusing, in error and indefinite since it is not clear if these are referred to the same things or different things. It is not clear if the hologram patterns are referred to the “interference fringes patterns” which in general physically constitute the hologram or to the diffraction light pattern of the light being diffracted by the hologram. The applicant is respectfully requested to clarify this both in the claims and in the specification. The scopes of the claims are indefinite because of these confusions.

The term “optical elements” recited in claim 3 is indefinite since it is not clear how does this relate to the “optical element” recited in early part of the claim. The phrase “the hologram pattern” recited in claim 3 is also indefinite since it is not clear how does it relate to the term “hologram patterns” recited in earlier part of the claim.

The phrase “a hologram pattern” recited in claim 4 is indefinite since it is not clear how does it related to “hologram pattern” and “hologram patterns” recited in its based claim. The term “n” in claim 18 is indefinite since it lacks proper antecedent basis from its based claim.

The claims as stand now are full of confusions, errors and indefiniteness. The examiner can only point out a few. The applicant is respectfully requested to clear out **ALL** of the discrepancies of the claims to make the claims in comply with the requirements of 35 USC 112, first and second paragraphs.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Takeda et al in view of the patent issued to Yamagata et al (PN. 5,473,471).**

The reasons for rejection are set forth in the previous Office Action dated August 13, 2001.

Claim 3 has been amended to add the feature having the intensity of the a portion of the diffraction light not used for light spot formation reduced and the reduced intensity of the portion is added to an intensity of a portion of the diffraction light used for light spot formation. Such feature is not explicitly taught in the Takeda et al reference. Yamagata et al in the same field of endeavor teaches a diffraction grating arrangement having the grating grooves formed to have the intensity of the unwanted higher orders of diffraction light be reduced and the reduced portion causes the maximize utilization of the light in the desired diffraction portion, (please see column 4, lines 61-65). It would then have been obvious to one skilled in the art to apply the teachings of Yamagata et al to design the holographic optical element with grooves pattern that has the effect of reducing the intensity of higher order diffraction light and maximize the utilization of the light for the first order diffraction light to increase the efficiency of the optical pickup head.

8. **Claims 4, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Takeda et al and Yamagata et al as applied to claim 3 above, and further in view of the patent issued to Harris.**

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The reasons for rejection are set forth in the paragraph above and in the previous Office Action dated August 13, 2001.

**9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Harris.**

The reasons for rejection are set forth in the previous Office Action dated August 13, 2001.

**10. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Fetzer.**

The reasons for rejection are set forth in the previous Office Action dated August 13, 2001.

Claim 17 has been amended to add the feature "a method for producing a hologram member having diffraction hologram patterns and non-diffraction hologram patterns" and the feature "the diffraction patterns are positioned at the hologram member" that are rejected under 35 USC 112, first paragraph, as set forth above. These features are making no physical sense and therefore cannot be addressed here.

**11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shepherd.**

The reasons for rejection are set forth in the previous Office Action dated August 13, 2001.

Claim 19 has been amended to add the feature "a method for producing a hologram member having diffraction hologram patterns and non-diffraction hologram patterns" and the feature "the diffraction patterns are positioned at the hologram member" that are rejected under 35 USC 112, first paragraph, as set forth above. These features are making no physical sense and therefore cannot be addressed here.

*Response to Arguments*

12. Applicant's arguments filed on January 14, 2002 have been fully considered but they are not persuasive. The newly amended claims have been fully considered and they are rejected for the reasons stated above.

The applicant is respectfully reminded there is no such thing as "non-diffraction holographic pattern". The designation for "14" to be such makes no physical sense. A hologram by definition has *interference fringes pattern* that when is illuminated by incident light causes the light to *interfere* with each other. The *interferences* of the light form *constructive interference light pattern* and *destructive interference light pattern*, which together constitute a *diffraction pattern*. A hologram therefore will not have a "non-diffraction pattern" since the interference fringes will always cause the incident light to interfere with each other and form diffraction pattern of the light. The diffraction pattern of the *light* will include *zero order, first order and higher orders* of the light interference patterns where the zero order may some time be denoted as the non-diffracted light and first and higher orders are as the diffracted light however they are all resulted of interference-diffraction effect of the hologram. **The applicant is respectfully reminded that the diffraction light pattern (including zero order, first or higher orders) is not the same as the hologram fringes patterns within the hologram itself.** The patterns designated by the numerals "14" and "15a" (or 15b, 15c) are patterns in the hologram member that are most likely to be the *interference fringes patterns* as shown in Figure 3, these patterns therefore **cannot** be "non-diffraction hologram pattern" or "non-diffraction". **The applicant is therefore respectfully requested to clarify the notation and the term to make the scope of the claims and the specification clear.**

In response to applicant's argument concerning the cited Takeda et al reference, the applicant is respectfully reminded that the nature or the structure of the holographic optical element is not the issue here since it is not the limitations of the claims.



In response to applicant's argument concerning the cited Harris reference, the applicant is respectfully reminded that the diffractive structure also serves as the light spot forming optical element.

*Conclusion*

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 703-305-6208. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on 703-308-1637. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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*Audrey Y. Chang*  
*Primary Examiner*  
*Art Unit 2872*

A. Chang, Ph.D.  
March 13, 2002

A handwritten signature in black ink, appearing to read 'Audrey Y. Chang', written in a cursive style.